

## WHAT IS CLAIMED IS:

1. A composition suitable for treating hair comprising:
  - a) an oxidizing agent; and
  - b) a chelant;wherein said chelant is in an amount sufficient to provide a damage benefit of less than about 160 cysteic acid units as measured by the FT-IR Damage Assessing Protocol after a 5-Cycle Oxidative Hair Treatment Protocol With 2 Intermediate Washes, as described herein.
2. A composition according to claim 1, wherein said damage benefit is less than about 110 cysteic acid units.
3. A composition according to claim 1, wherein said composition comprises a chelant (L) having a  $\frac{\log K_{CuL}}{\log K_{CaL}}$  ratio calculated at pH 10 of at least about 3.20, wherein  $\log K_{CuL}$  is the common logarithm of the Conditional Stability Constant of said chelant with  $Cu^{2+}$  and  $\log K_{CaL}$  is the common logarithm of the Conditional Stability Constant of said chelant with  $Ca^{2+}$ .
4. A composition according to claim 3, wherein said chelant (L) has a Hydrogen Peroxide Decomposition Ratio (% Loss) of less than about 10% as measured by the Hydrogen Peroxide Decomposition Ratio Measurement Protocol, as described herein.
5. A composition according to claim 3, wherein said chelant forms a hexadendate complex with  $Cu^{2+}$ .
6. A composition according to claim 3, wherein said chelant (L) is an aminocarboxylic acid chelant selected from the group consisting of diamine-N,N'-dipolyacids, monoamine monoamide-N,N'-dipolyacids and N,N'-bis(2-hydroxybenzyl)ethylenediamine-N,N'-diacetic acid (HBED), and salts thereof, derivatives thereof and mixtures thereof.

7. A composition according to claim 6, wherein said aminocarboxylic acid chelant comprises at least two acid groups independently selected from a carboxylic acid group (-COOH), a sulphonic group (-SO<sub>3</sub>H), an o-hydroxyphenyl group, a m-hydroxyphenyl group, and a p-hydroxyphenyl group.
8. A composition according to claim 7, wherein said aminocarboxylic acid chelant is selected from the group consisting of ethylenediamine-N,N'-disuccinic acid (EDDS), ethylenediamine-N,N'-diglutamic acid (EDDG), 2-hydroxypropylenediamine-N,N'-disuccinic acid (HPDDS), glycylglycyl-L-proline-N,N'-disuccinic acid (GADS), ethylenediamine-N,N'-bis(ortho-hydroxyphenyl acetic acid) (EDDHA), salts thereof, derivatives thereof and mixtures thereof.
9. A composition according to claim 1, wherein the pH of the composition is between about 8 and about 12.
10. A composition according to claim 1, wherein said composition is in the form of an oil-in-water emulsion.
11. A composition according to claim 1, wherein said composition is in the form of a thickened aqueous solution.
12. A composition according to claim 1, wherein said oxidizing agent is present at a level of from about 0.1% to about 40% by weight of the composition and is selected from water-soluble oxidizing agents and mixtures thereof.
13. A composition according to claim 12, wherein said oxidizing agent comprises hydrogen peroxide.
14. A composition according to claim 1, wherein said chelant is present at a level of from about 0.01% to about 10% by weight of the composition.
15. A composition according to claim 1, further comprising at least one oxidative hair dye precursor.

16. A method of treating hair, said method comprising the steps of:
- i) applying a first composition comprising an oxidizing agent;
  - ii) applying a second composition comprising a chelant wherein said chelant is in an amount sufficient to provide a damage benefit of less than about 160 cysteic acid units as measured by the FT-IR Damage Assessing Protocol after a 5-Cycle Oxidative Hair Treatment Protocol With 2 Intermediate Washes, as described herein; and
  - iii) applying a third composition comprising an oxidizing agent;
- wherein steps i) and iii) are separated by at least 1 day and step ii) does not take place immediately before step iii).
17. A kit for dyeing hair comprising a first and a second compositions packaged in different containers, wherein said first composition comprises an oxidizing agent and said second composition comprises an oxidative dye precursor, wherein the resulting mixture of said first and second compositions is a composition according to claim 15.
18. A method of dyeing human hair, said method comprising the steps of:
- i) mixing the first and second composition of a kit according to claim 17;
  - ii) applying the mixture obtained after step i) to hair;
  - iii) massaging said mixture into hair;
  - iv) retaining said mixture on the hair for an amount of time sufficient for the mixture to dye the hair; and
  - iv) rinsing off said composition with water.
19. A composition suitable for treating hair comprising:
- a) an oxidizing agent; and
  - b) a chelant;
- wherein said chelant is in an amount sufficient to provide a Normalized Shine Ratio of at least about 0.80 as measured by the Goniophotometer Damage Assessing Protocol after a 5-Cycle Hair Oxidative Treatment Protocol With 10 Intermediate Washes, as described herein.

20. A composition according to claim 19, wherein said composition comprises a chelant (L) having a  $\frac{\log K_{\text{CuL}}}{\log K_{\text{CaL}}}$  ratio calculated at pH 10 of at least about 3.20, wherein  $\log K_{\text{CuL}}$  is the common logarithm of the Conditional Stability Constant of said chelant with  $\text{Cu}^{2+}$  and  $\log K_{\text{CaL}}$  is the common logarithm of the Conditional Stability Constant of said chelant with  $\text{Ca}^{2+}$ .
21. A composition according to claim 20, wherein said chelant (L) has a Hydrogen Peroxide Decomposition Ratio (% Loss) of less than about 10% as measured by the Hydrogen Peroxide Decomposition Ratio Measurement Protocol, as described herein.
22. A composition according to claim 20, wherein said chelant (L) forms a hexadendate complex with  $\text{Cu}^{2+}$ .
23. A composition according to claim 20, wherein said chelant (L) is an aminocarboxylic acid chelant selected from the group consisting of diamine-N,N'-dipolyacids, monoamine monoamide-N,N'-dipolyacids and N,N'-bis(2-hydroxybenzyl)ethylenediamine-N,N'-diacetic acid (HBED), salts thereof, derivatives thereof and mixtures thereof.
24. A composition according to claim 23, wherein said aminocarboxylic acid chelant comprises at least two acid groups independently selected from a carboxylic acid group ( $-\text{COOH}$ ), a sulphonic group ( $-\text{SO}_3\text{H}$ ), an o-hydroxyphenyl group, the m-hydroxyphenyl group, and a p-hydroxyphenyl group.
25. A composition according to claim 24, wherein said aminocarboxylic acid chelant is selected from the group consisting of ethylenediamine-N,N'-disuccinic acid (EDDS), ethylenediamine-N,N'-diglutamic acid (EDDG), 2-hydroxypropylenediamine-N,N'-disuccinic acid (HPDDS), glycine-N,N'-disuccinic acid (GADS), ethylenediamine-N,N'-bis(ortho-hydroxyphenyl acetic acid) (EDDHA), and salts thereof, derivatives thereof and mixtures thereof.
26. A composition according to claim 19, wherein said oxidizing agent is present at a level of from about 0.1% to about 40% by weight of the composition and is selected from water-soluble oxidizing agents and mixtures thereof.

27. A composition according to claim 19, further comprising at least one oxidative hair dye precursor.
28. A method of treating hair, said method comprising the steps of:
- i) applying a first composition comprising an oxidizing agent;
  - ii) applying a second composition comprising a chelant wherein said chelant is in an amount sufficient to provide a Normalized Shine Ratio of at least about 0.80 as measured by the Goniophotometer Damage Assessing Protocol after a 5-Cycle Hair Oxidative Treatment Protocol With 10 Intermediate Washes, as described herein; and
  - iii) applying a third composition comprising a second oxidizing agent;
- wherein steps i) and iii) are separated by at least 1 day and step ii) does not take place immediately before step iii).
29. A kit for dyeing hair comprising a first and a second compositions packaged in different containers, wherein said first composition comprises an oxidizing agent and said second composition comprises an oxidative dye precursor, wherein the resulting mixture of said first and second compositions is a composition according to claim 27.
30. A method of dyeing human hair, said method comprising the steps of:
- i) mixing the first and second composition of a kit according to claim 29;
  - ii) applying the mixture obtained after step i) to hair;
  - iii) massaging said mixture into hair;
  - iv) retaining said mixture on the hair for an amount of time sufficient for mixture to dye the hair;
  - iv) rinsing off said composition with water.